

ABSTRACT OF THE DISCLOSURE

A data structure for efficient enqueueing and dequeuing is disclosed. The structure includes a horizontally linked list, an array, a vertically linked list, and a head pointer.

Entity ranks are distributed over the array, where each array entry has a range of ranks.

- 5 Each array entry points to null or the entity having the greatest rank within that entry's range. The horizontally linked list links at least a subset of ranked entities. Each entity in the linked list has a unique rank as compared to the ranks of the other entities in the list. Each vertically linked list links a subset of entities having an identical rank. The head pointer points to the entity that has the greatest rank. Methods for adding entities to
- 10 and removing entities from the data structure are also disclosed. The invention can be used to enqueue threads to and dequeue threads from a priority queue.

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Signature of Michael Dryja